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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/088,229	03/19/2002	Kazufumi Kai	Q61659	1681

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EXAMINER	
ROBERTSON, JEFFREY	
ART UNIT	PAPER NUMBER
1712	

DATE MAILED: 03/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action SummaryApplication No. **22**

10/088,229

Applicant(s) **4)**

KAI ET AL.

Examiner

Jeffrey B. Robertson

Art Unit

1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 5-33 is/are pending in the application.
- 4a) Of the above claim(s) 7-12,15-25,27 and 30 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13 and 14 is/are allowed.
- 6) ☒ Claim(s) 1,2,5,6,26,28,29 and 31-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. It is noted that as a result of the request for continued examination of 2/28/2005, the amendment after final of 1/26/05 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 5, 6, 26, 28, 29, and 31-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Lazear (U.S. Patent No. 4,112,146).

For claims 1 and 2, Lazear teaches a fumarate derivative containing between 2 and 10 fumarate groups and between 1 and 5 allyl ether groups. The amount of these groups fall within the ratio claimed by applicant in claims 1 and 2. Lazear teaches that the unsaturated polyester component is a reaction product of a dicarboxylic acid and a diol in col. 2, lines 31-41. The allyl ether group is incorporated into the polymer through allyl ether alcohol reactants, resulting in terminal allyl ether groups. See col. 3, lines 3-13. For claims 5, 6, 31, and 32, more than 80% of R¹ corresponds to formula (4), where R⁴ is methyl.

For claims 26, 28, 29, and 33, in column 5, lines 16-58, Lazear teaches 0.01 to 15% by weight of a polymerization initiator and that the product is cured.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 2, 5, 6, 26, 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Friedlander (5,536,760).

The reference teaches unsaturated polyesters containing structurally incorporated vinyl ether. Fumaric acid is a preferred acid for use in preparing the polyester because it polymerizes more readily with vinyl ether. Compositions containing the vinyl ether modified unsaturated polyesters can be cured using radical polymerization initiators. See col. 2, lines 20-35, col. 4, lines 1-40 and col. 5, line 50 through col. 6, line 10. In column 1, line 45, Friedlander teaches that the polyester is oligomeric in nature. In column 3, lines 43-52, Friedlander teaches that it is preferred that the ratio of vinyl ether to fumarate groups does not exceed 1:1. Given this ratio and the teaching that the polyester may be oligomeric, it would have been obvious to one of ordinary skill in the art at the time of the invention to formulate polyesters with the amounts of units specified by applicant as suggested by the reference.

Response to Arguments

6. Applicant's arguments filed 2/28/05 have been fully considered but they are not persuasive.

Applicant argues that the ratio of vinyl ether groups to carbon-carbon double bond groups in the unsaturated polyester set forth in Friedlander in column 3, lines 43-52 does not correspond to the molar ratio disclosed in the present claims. The examiner disagrees. The unsaturated bonds in the polyester component corresponds to the Formula unit (2) of applicant's claims. Specifically the ratio in Friedlander directly correlates to the number of fumaric acid residues present in the unsaturated polyester. Applicant also argues that Friedlander does not teach that the group of formula (1) is directly bonded to the unsaturated polyester. The present claims do not require that the two are directly bonded. The present claims only require that the two formulas are present in the same molecule. Specific conductivity is not claimed. Applicant also argues that there are unexpected properties shown by the products of the present claims and points to Table 6 of the specification. The examiner is not persuaded by this argument because Comparative Example 1 appears to be drawn to compounds containing only one fumarate residue, which is not consistent with the compounds disclosed by Friedlander. Therefore the rejection set forth above is continued and the withdrawn claims will not be rejoined at this time.

Allowable Subject Matter


7. Claims 13 and 14 are allowed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey B. Robertson whose telephone number is (571) 272-1092. The examiner can normally be reached on Mon-Fri 7:00-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jeffrey B. Robertson
Primary Examiner
Art Unit 1712

JBR